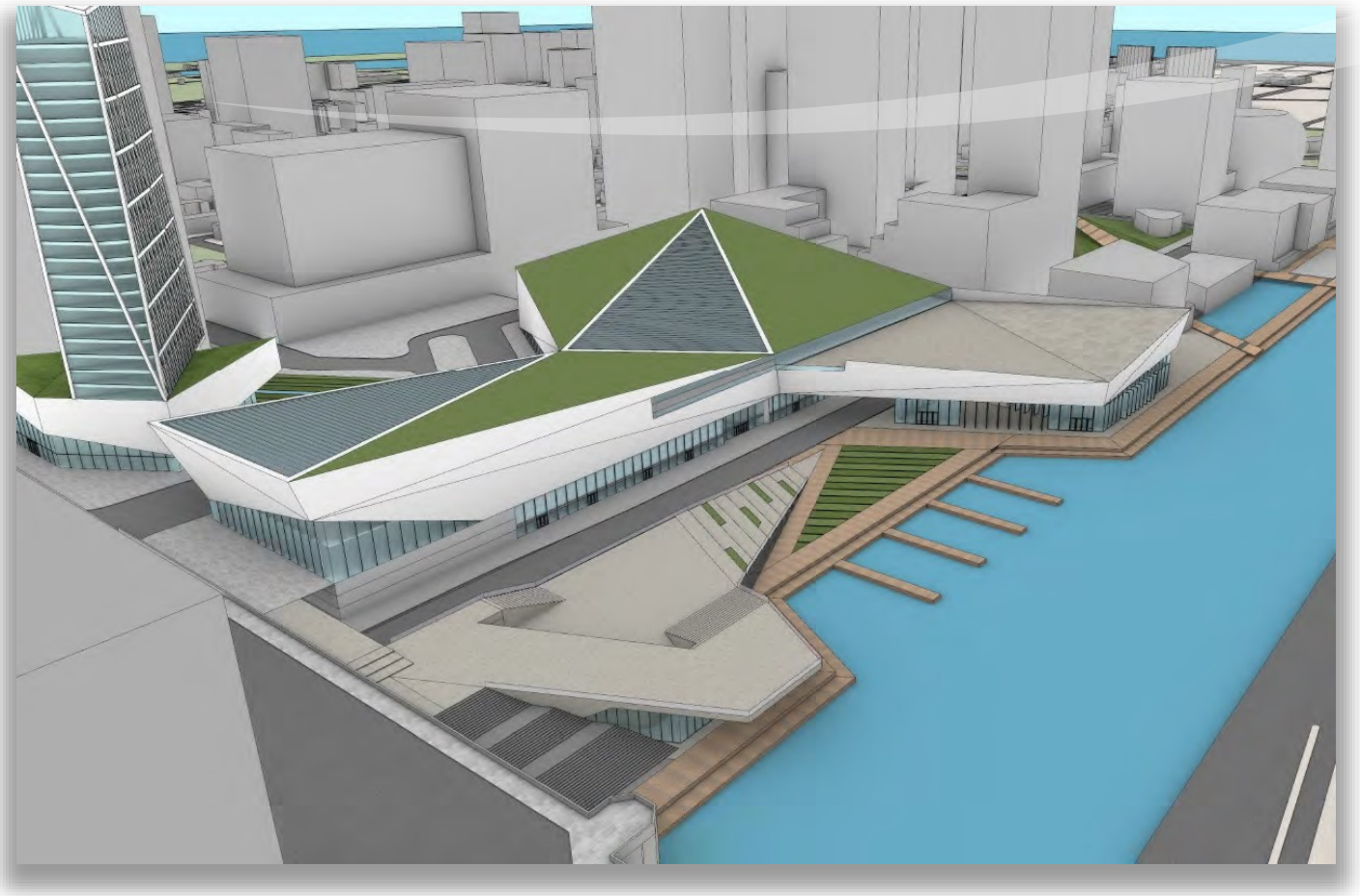

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Introduction

This report presents an addendum to the findings and recommendations of a transportation study dated October 12, 2021 conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Casino to be located within The 78 mixed-use development in the South Loop neighborhood of Chicago, Illinois. The proposed Casino will be located within the northern half of The 78 which is generally bounded by Roosevelt Road to the north, Clark Street to the east and the south branch of the Chicago River to the west.

At the request of the City of Chicago, the estimated trip generation for the proposed Casino was revised to reflect a lower modal split reduction and captive market reduction. In addition, the Friday late night and Saturday night peak hour trips have been included in the revised trip generation table.

Development Traffic Generation

As discussed in the original transportation study, the number of trips to be generated by the proposed Casino was estimated based on trip generation surveys conducted by KLOA, Inc. of the Rivers Casino in Des Plaines in Illinois. Based on a review of the trip generation surveys of the Rivers Casino in Des Plaines, Illinois, the casino generates approximately 10 percent more trips during the Friday late evening peak hour than during the weekday evening peak hour of the adjacent street. On Saturday night, the casino generates approximately 15 percent more trips than during the weekday evening peak hour.

The number of trips to be generated by the hotel and other uses was estimated based on the vehicle trip generation rates contained in *Trip Generation Manual*, 10th Edition, published by the Institute of Transportation Engineers (ITE) adjusted to reflect the location of the site in an urban environment and within proximity to various alternative modes of transportation.

Table 1 shows the revised trip generation estimates.

Table 1
PROJECTED SITE-GENERATED TRAFFIC VOLUMES

ITE LUC	Land Use/Size	Weekday Morning Peak Hour[1]			Weekday Evening Peak Hour[2]			Friday Night Peak Hour[3]			Saturday Night Peak Hour[4]		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
	Casino – 3,900 positions	172	62	234	817	755	1,572	899	831	1,730	940	868	1,808
	Modal Split Reduction (15%)	*-26*	*-9*	*-35*	*-123*	*-113*	*-236*	*-135*	*-125*	*-260*	*-141*	*-130*	*-271*
	Subtotal	146	53	199	694	642	1,336	764	706	1,470	799	738	1,537
	Captive Market Reduction (5%)	*-7*	*-3*	*-10*	*-35*	*-32*	*-67*	*-38*	*-35*	*-73*	*-40*	*-37*	*-77*
	Casino Total	139	50	189	659	610	1,269	726	671	1,397	759	701	1,460
310	Hotel – 300 rooms	86	59	145	101	98	199	42	41	83	43	43	86
	Modal Split Reduction (50%)	*-43*	*-30*	*-73*	*-51*	*-49*	*-100*	*-21*	*-20*	*-41*	*-22*	*-21*	*-43*
	Subtotal	43	29	72	50	49	99	21	21	42	21	22	43
	Captive Market Reduction (20%)	*-9*	*-6*	*-15*	*-10*	*-10*	*-20*	*-4*	*-4*	*-8*	*-4*	*-4*	*-8*
	Hotel Total	34	23	57	40	39	79	17	17	34	17	18	35
540	Discovery Partners Institute – 2,000 students	357	84	441	221	174	395	--	--	--	--	--	--
	Modal Split Reduction (60%)	*-214*	*-50*	*-264*	*-133*	*-104*	*-237*	*--*	*--*	*--*	*--*	*--*	*--*
	Subtotal	143	34	177	88	70	158	--	--	--	--	--	--
	Captive Market Reduction (20%)	*-28*	*-7*	*-35*	*-18*	*-14*	*-32*	*--*	*--*	*--*	*--*	*--*	*--*
	Discovery Total	115	27	142	70	56	126	--	--	--	--	--	--
932	Observation Deck – 69,200 s.f.[5]	--	--	--	130	80	210	72	71	143	91	91	182
	Modal Split Reduction (50%)	--	--	--	*-65*	*-40*	*-105*	*-36*	*-36*	*-72*	*-45*	*-45*	*-90*
	Observation Deck Total	--	--	--	65	40	105	36	35	71	46	46	92
	Total Development Trips	288	100	388	834	745	1,579	779	724	1,503	822	765	1,587

Note: Casino trip generation based on KLOA, Inc. surveys of other casinos in Illinois
1 – 7:30 – 8:30 A.M.
2 – 5:00 – 6:00 P.M.
3 – 8:00 – 9:00 P.M.
4 – 7:00 – 8:00 P.M.
5 – Only the square footage of the F & B, Thrill Ride, event space, and observation deck (total of 21,300 s.f.) were utilized for the trip generation estimates.

Proposed Access System

As previously stated in the Transportation Study, access will be provided via a full access drive on Roosevelt Road and a full access drive off the Wells/Wentworth extension. The access drive off Roosevelt Road (LaSalle Street) will align with Delano Court and form the fourth (northbound) leg at its signalized intersection with Roosevelt Road. Consistent with the improvements for the overall development, a westbound left-turn lane will be provided to accommodate the new movement into the site and the new northbound approach will provide two inbound lanes and three outbound lanes striped for dual left-turn lanes and a combined through/right-turn lane.

The access drive off the Wells/Wentworth extension will provide one inbound lane and two outbound lanes striped for an exclusive left-turn lane and an exclusive right-turn lane under traffic signal control. Wells/Wentworth will provide a through lane and an exclusive right-turn lane in the northbound approach while the southbound approach will provide one through lane and an exclusive left-turn lane. Pedestrian accommodations, including high visibility crosswalks and countdown timers, will also be provided. In addition to these two access points, the site will also provide an access drive, henceforth known as the North Drive, at the existing traffic signal on Clark Street located approximately 300 feet south of Roosevelt Road. The North Drive will connect Clark Street with the proposed LaSalle Street and will provide full ingress/egress with one inbound lane and two outbound lanes striped to provide an exclusive left-turn lane and an exclusive right-turn lane. An exclusive left-turn lane will be provided for northbound movements as well. Pedestrian accommodations, including high visibility crosswalks and countdown timers, will also be provided.

It is important to note that LaSalle Street will be extended for approximately 1,925 feet south to intersect with the proposed 15th Street extension. The plan calls for extending 15th Street from its current terminus at its signalized intersection with Clark Street west to the Wells/Wentworth extension. The fourth (eastbound) leg at its intersection with Clark Street will provide one inbound lane and two outbound lanes striped for an exclusive left-turn lane and shared through/right-turn lane. A northbound left-turn lane will also be provided on Clark Street. At its intersection with the Wells/Wentworth extension, 15th Street will provide one inbound lane and two outbound lanes. It is anticipated that this new intersection will be under traffic signal control. Wells/Wentworth will provide a through lane and an exclusive right-turn lane in the northbound approach while the southbound approach will provide one through lane and an exclusive left-turn lane. Pedestrian accommodations, including high visibility crosswalks and countdown timers, will also be provided.

Therefore, the site will provide five separate access points that will disperse traffic in a very efficient manner without overloading any specific intersection.

Site Generated Traffic Assignment

The weekday morning, evening and Friday late evening peak hour traffic volumes that will be generated by Phase I of the development were assigned to the street system in accordance with the described directional distribution in the original transportation study and the proposed access system and are shown in Figures 1A and 1B.

It is important to note that based on a review of hourly traffic counts conducted by the Illinois Department of Transportation (IDOT) on various street segments within the vicinity of the site (Roosevelt Road, Canal Street, 18th Street, etc.), traffic volumes from 8:00 to 9:00 P.M. are approximately 35 percent lower than those during the weekday evening peak hour of the adjacent street system. The Saturday evening peak hour was not analyzed given that on Saturday evening the adjacent street traffic volumes can be even lower (as much as 40-45 percent lower than during the weekday evening peak hour of adjacent street system). As such, although the casino might generate higher traffic volumes on a Saturday night, the lower traffic volumes in the area streets provide for additional reserve capacity. This additional reserve capacity will offset the impact the additional traffic volumes may have without negatively impacting the operations of the adjacent streets.

Projected Traffic Volumes

The existing traffic volumes were combined with the traffic from the other developments in the area, the reassignment of traffic due to the Wells Street/Wentworth Avenue Connector, and the new peak hour traffic volumes to be generated by the development (Figures 1A and 1B) to determine the total projected traffic volumes, shown in Figures 2A and 2B. Furthermore, in order to account for the increase in population in the study area, bicycle and pedestrian volumes were increased at key intersections based on the anticipated modal split reduction for each land use presented in Table 1. It should be noted that the Friday night existing peak hour volumes were based on reducing the weekday evening peak hour traffic volumes by approximately 35, as discussed above.

Traffic Analyses and Recommendations

Future conditions traffic analyses were performed for the signalized intersections within the study area to determine the operation of the roadway system assuming the new trip estimates and access system.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM),* 6th Edition and modeled/analyzed using Synchro 11 software.

A summary of the traffic analysis results for the existing, Phase I traffic volumes is presented in Table 2. A discussion of the intersections and recommendations follows. Copies of the capacity analysis summary sheets are included in the Appendix.

Table 2
CAPACITY ANALYSIS RESULTS

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Friday Late Evening Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Roosevelt Road with Clark Street						
• Overall	C	28.5	D	49.5	C	27.8
• Eastbound Approach	C	22.0	D	53.9	D	37.8
• Westbound Approach	D	36.3	D	54.5	C	24.4
• Northbound Approach	C	24.9	D	40.4	C	26.4
• Southbound Approach	B	13.7	C	32.0	C	24.4
Roosevelt Road with Delano Court/Proposed LaSalle Street						
• Overall	A	9.8	B	18.5	B	12.2
• Eastbound Approach	A	8.8	C	20.3	B	11.0
• Westbound Approach	A	8.1	B	12.7	A	7.5
• Northbound Approach	B	15.0	C	31.3	C	26.2
• Southbound Approach	D	41.9	C	27.8	C	25.6
Roosevelt Road with State Street						
• Overall	C	33.7	D	42.8	C	24.0
• Eastbound Approach	B	17.9	C	27.8	B	15.8
• Westbound Approach	D	41.4	D	49.0	D	35.1
• Northbound Approach	D	40.1	D	50.6	B	19.7
• Southbound Approach	C	32.9	D	53.0	C	26.4
Roosevelt Road with Canal Street						
• Overall	C	29.9	D	40.0	C	26.4
• Eastbound Approach	C	28.9	D	42.6	C	31.4
• Westbound Approach	C	28.7	C	30.3	C	24.0
• Northbound Approach	C	34.0	D	47.0	C	25.2
• Southbound Approach	C	24.7	D	43.2	C	20.5

Table 2 continued

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Friday Late Evening Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Canal Street with 18th Street						
• Overall	C	28.3	D	35.7	C	21.9
• Eastbound Approach	C	33.7	D	43.1	C	31.7
• Westbound Approach	C	29.6	C	32.6	D	35.6
• Northbound Approach	C	27.6	C	32.1	B	14.6
• Southbound Approach	B	16.4	C	34.4	B	15.1
18th Street with Wentworth Avenue						
• Overall	C	26.2	D	49.7	C	30.9
• Eastbound Approach	D	35.7	E	62.5	D	39.0
• Westbound Approach	C	31.7	D	39.7	D	38.8
• Northbound Approach	B	15.4	D	48.6	B	18.8
• Southbound Approach	B	17.5	D	43.9	C	26.3
18th Street with Clark Street						
• Overall	C	30.2	C	29.8	C	21.9
• Eastbound Approach	D	42.7	D	46.6	C	31.7
• Westbound Approach	D	48.7	D	43.4	D	35.6
• Northbound Approach	B	18.9	B	19.0	B	14.6
• Southbound Approach	B	16.6	C	20.9	B	15.2
Wells Street with Polk Street						
• Overall	E	58.7	D	49.0	C	23.9
• Eastbound Approach	C	31.0	C	21.4	C	27.9
• Westbound Approach	E	68.8	E	61.8	D	40.0
• Northbound Approach	E	73.4	E	66.4	C	26.0
• Southbound Approach	C	21.2	C	32.8	B	13.3
Clark Street with Polk Street						
• Overall	D	42.1	D	43.2	B	18.5
• Eastbound Approach	D	40.7	C	33.1	C	23.3
• Westbound Approach	D	43.3	D	38.1	C	34.4
• Northbound Approach	D	45.9	E	62.6	B	15.3
• Southbound Approach	C	32.6	C	24.5	B	17.1

Table 2, continued

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Friday Late Evening Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Wells Wentworth Connector with Access Drive						
• Overall	B	14.8	B	10.8	B	10.1
• Westbound Approach	B	15.5	B	19.8	B	18.9
• Northbound Approach	C	25.1	A	6.5	A	5.2
• Southbound Approach	A	8.2	A	9.8	A	8.0
Clark Street and North Drive						
• Overall	A	1.4	A	5.9	A	6.4
• Eastbound Approach	D	47.3	D	49.0	D	45.4
• Northbound Approach	A	1.5	A	2.2	A	1.7
• Southbound Approach	A	0.7	A	6.2	A	5.5
Clark Street with 15th Street						
• Overall	A	4.4	A	7.6	A	5.0
• Eastbound Approach	B	12.7	C	33.2	C	32.5
• Westbound Approach	C	34.9	D	42.0	A	2.2
• Northbound Approach	A	3.6	A	6.3	A	4.0
• Southbound Approach	A	2.8	A	6.8	A	4.2
Wells Wentworth Connector with 15th Street						
• Overall	A	8.7	A	8.9	A	8.4
• Westbound Approach	B	15.7	C	20.2	C	25.2
• Northbound Approach	B	13.0	B	12.5	B	12.4
• Southbound Approach	A	5.0	A	5.2	A	4.3

LOS – Level of Service
Delay is measured in seconds.

Findings

Based on the results of the future conditions capacity analyses, all of the studied intersections are projected to operate at an overall acceptable level of service with the exception of the intersection of Wells Street and Polk Street during the weekday morning peak hour. This is due to the existing capacity constraints resulting from the lack of right-of-way to implement any street improvements.

In order to better accommodate future traffic and pedestrian volumes throughout the study area, various improvements/modifications, as discussed in the original transportation study, have been identified at each intersection. These improvements/modifications range from the installation of new traffic signals and the provision of protected-permissive left-turn phases to minor signal timing adjustments. Table 3 presents a summary of the recommended improvements.

Table 3
PROPOSED INTERSECTION IMPROVEMENTS/MODIFICATIONS

Intersection	Improvements
Roosevelt Road with Delano Court/Proposed LaSalle Street	• Modify intersection, signal, and timings to accommodate 4th (northbound) approach • Northbound approach will provide two inbound lanes and three outbound lanes striped for dual left-turn lanes and a combined through/right-turn lane • Restripe existing median to provide westbound left-turn lane • Provide westbound protected/permissive left-turn phase • Provide protected-only left-turn phases for the northbound and southbound approaches • Signage and striping should be provided allowing right-turn movements onto LaSalle Street from the existing eastbound bus lane
Roosevelt Road with Clark Street	• Adjust signal timings to provide longer protected eastbound left-turn phase during the morning peak hour • Adjust signal timings to provide longer protected northbound left-turn phase during the evening peak hour • Adjust offset during the morning peak hour • Provide pedestrian countdown timers for all legs
Roosevelt Road with State Street	• Adjust signal timings to provide longer protected northbound and eastbound left-turn phases during the morning and evening peak hours
18th Street with Canal Street	• Adjust signal timings to provide longer protected eastbound left-turn phase during the morning and evening peak hours
18th Street with Wentworth Avenue	• Adjust signal timings to provide protected/permissive left-turn phases for all approaches • Increase the cycle length to 100 seconds during the evening peak hour • Provide exclusive southbound right-turn lane
18th Street with Clark Street	• Adjust signal timings to provide longer eastbound and westbound protected left-turn phases during the morning peak hour • Provide pedestrian countdown timers for all legs

Table 3 - continued

Intersection	Improvements
Clark Street with 15th Street	• Modify intersection, signal, and timings to accommodate 4th (eastbound) approach • Eastbound approach will provide one inbound lane and two outbound lanes striped for exclusive left-turn lane and combined through/right-turn lane • Provide exclusive left-turn lanes for the northbound and southbound approaches with protected/permissive left-turn phases for each direction • Provide pedestrian countdown timers for all legs • Provide high-visibility crosswalks on all legs
Polk Street with Clark Street	• Restripe the northbound approach to provide a through lane and a shared through/right-turn lane • Prohibit on-street parking on the east side of Clark Street north of Polk Street during the morning and evening peak periods • Adjust signal timings to provide longer northbound protected left-turn phase during the morning peak hour • Adjust signal timings to provide longer northbound and southbound green time and longer northbound protected left-turn phase
Polk Street with Wells Street (to be completed by others)	• Adjust signal timing to provide longer northbound and southbound green time and longer eastbound and westbound green time during the evening peak hour
Clark Street with Proposed North Drive	• Modify existing intersection, signal, and timings to accommodate 3rd (eastbound) approach • Eastbound approach will provide one inbound lane and two outbound lanes striped to provide exclusive left-turn and right-turn lanes • Provide northbound left-turn lane with a protected/permissive left-turn phase • Provide pedestrian countdown timers for all legs • Provide high-visibility crosswalks on all legs
Wells Street/Wentworth Avenue Connector with 15th Street Extension	• Westbound approach will provide one inbound lane and two outbound lane striped for an exclusive left-turn lane and an exclusive right-turn lane with outbound movements under stop sign control • Provide a southbound left-turn lane with a protected/permissive left-turn phase • Install a traffic signal • Provide pedestrian countdown timers for all legs • Provide high-visibility crosswalks on all legs

Table 3 - continued

Intersection	Improvements
Wells Street/Wentworth Avenue Connector with Access Drive	• Westbound approach will provide one inbound lane and two outbound lanes striped for exclusive left-turn and right-turn lanes • Install traffic signal • Provide a southbound left-turn lane with a protected/permissive left-turn phase • Provide pedestrian countdown timers for all legs • Provide high-visibility crosswalks on all legs

Conclusion

In summary and consistent with what was presented in the original transportation study, the following is concluded:

- The volume of traffic that will be generated by the Casino will be reduced given its location in an urban area and its proximity to alternative modes of transportation.

- The results of the revised analyses, incorporating a lower modal split reduction (15 percent) and considering Casino peak time operations, indicated that overall the street system and impacted intersections will continue to operate at acceptable levels of service.

- The mixed-use nature of The 78 will promote interaction between uses, further reducing the volume of vehicular traffic to be generated by the Casino development.

- Multiple access points, including signalized intersections off Roosevelt Road, Clark Street and Wells Street/Wentworth Avenue Connector, will allow for good connectivity to the surrounding street system and for more efficient ingress/egress.

- The extension of LaSalle Street between Roosevelt Toad and 15th Street will improve traffic flow and will ensure the distribution of the casino traffic more adequately and efficiently.

- A number of mitigation measures, including new traffic signals, signal timing modifications and improved pedestrian accommodations with countdown timers and high visibility crosswalks, will be implemented to mitigate the traffic impact and to ensure efficient traffic flow to and from the site.

- The Wells Street/Wentworth Avenue Connector will provide an additional corridor in the area and alleviate traffic along other north-south corridors, particularly Canal Street and Clark Street.

- Adequate accommodations are provided in the area to promote alternate modes of transportation, such as walking and biking.

- The area is served by an extensive public transportation system, including Metra commuter trains and CTA rapid transit trains and buses.

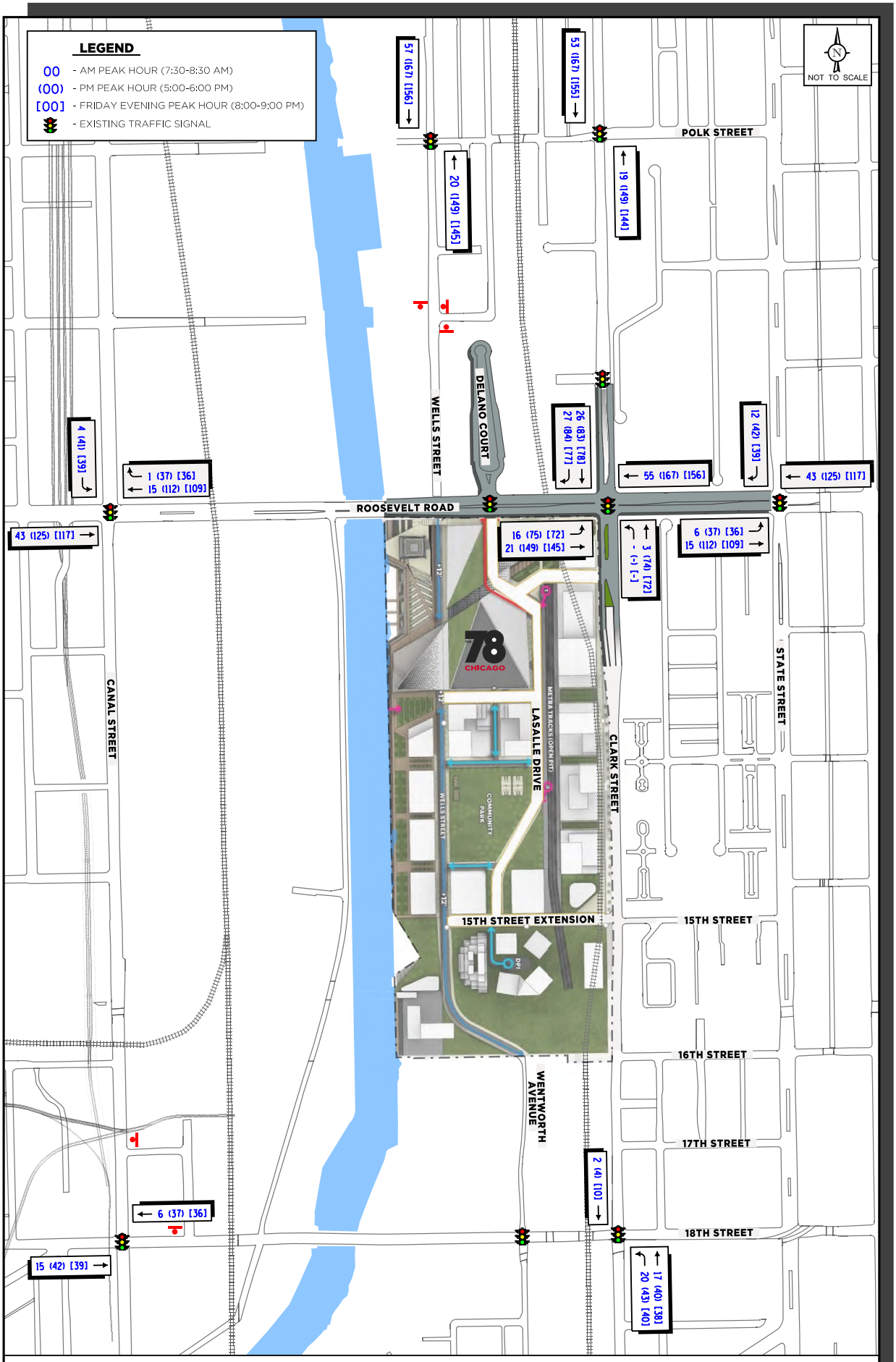
- Providing shuttle buses between the site and the adjacent transit stations will help reduce the traffic load and provide patrons with convenient access to the site.

- The provision of a new Red Line station is under consideration within/near the southern end of the site, which would further encourage the use of the CTA system.

Appendix

Figures
Level of Service Table
Capacity Analyses Reports

Figures

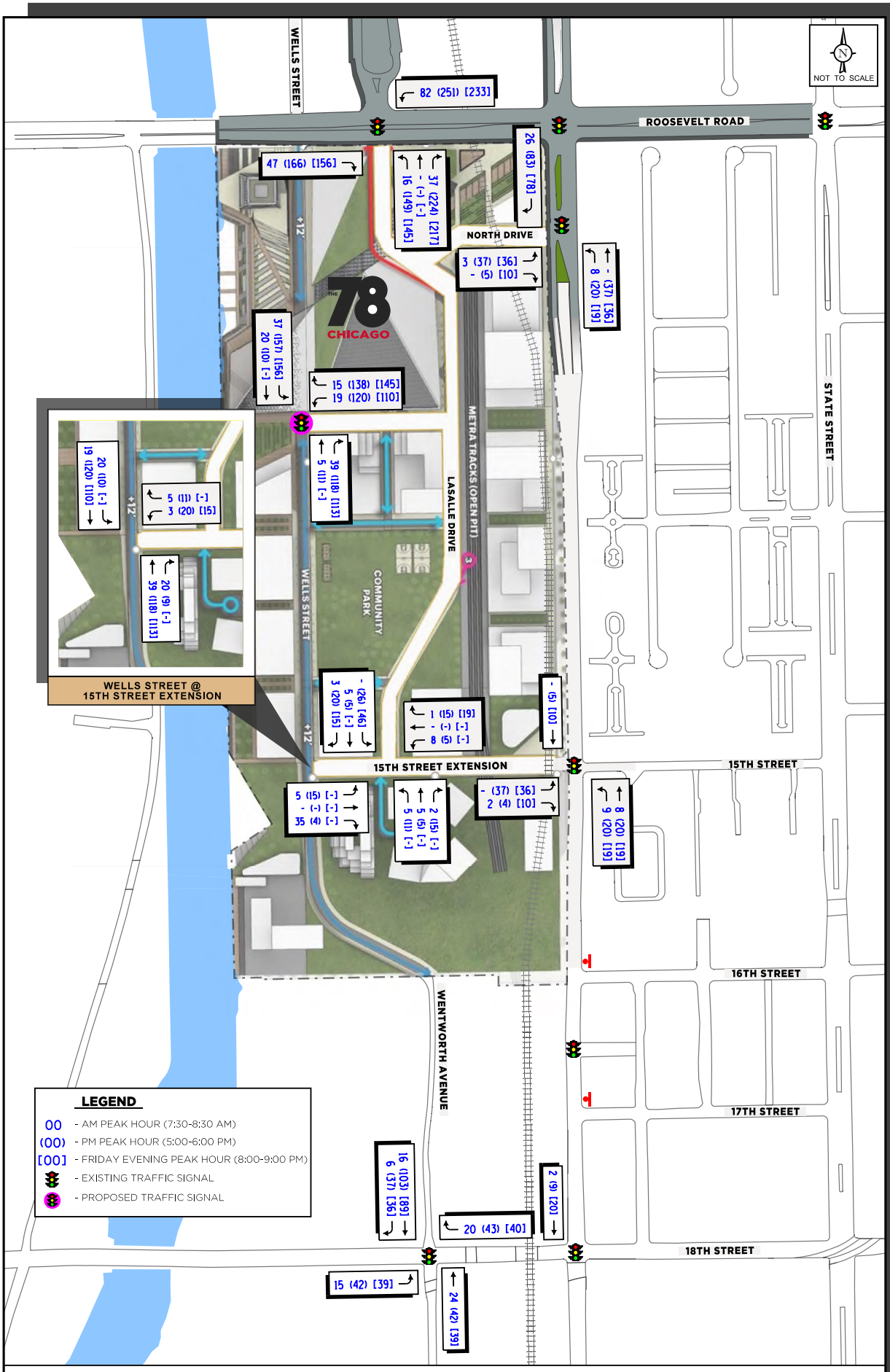


PHASE I ESTIMATED SITE TRAFFIC ASSIGNMENT
OVERALL AREA

78 CHICAGO

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

Job No: 21-203 Figure: 1A



THE 78 CHICAGO

PHASE I ESTIMATED SITE TRAFFIC ASSIGNMENT
SITE AREA

KLOA
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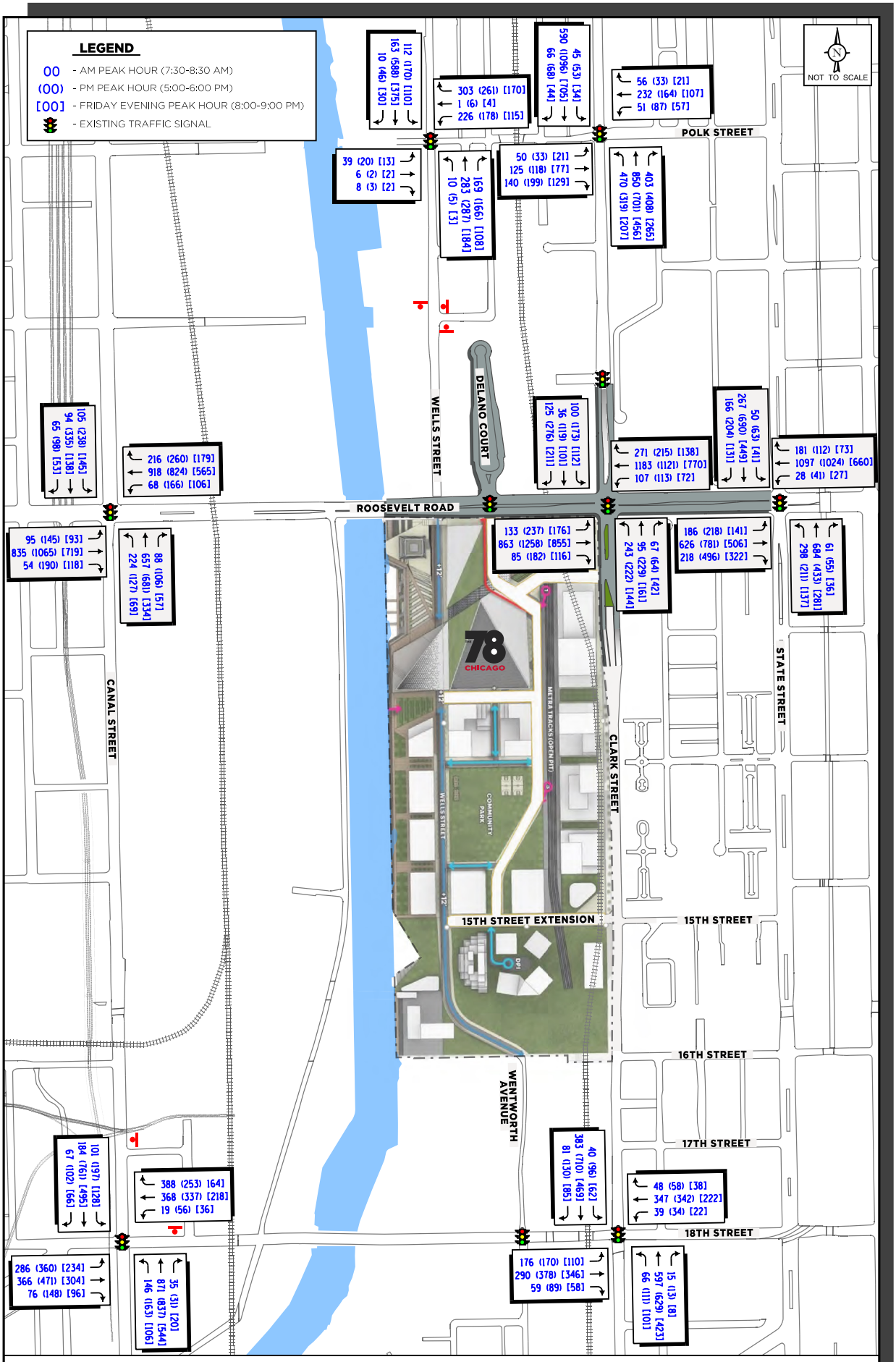
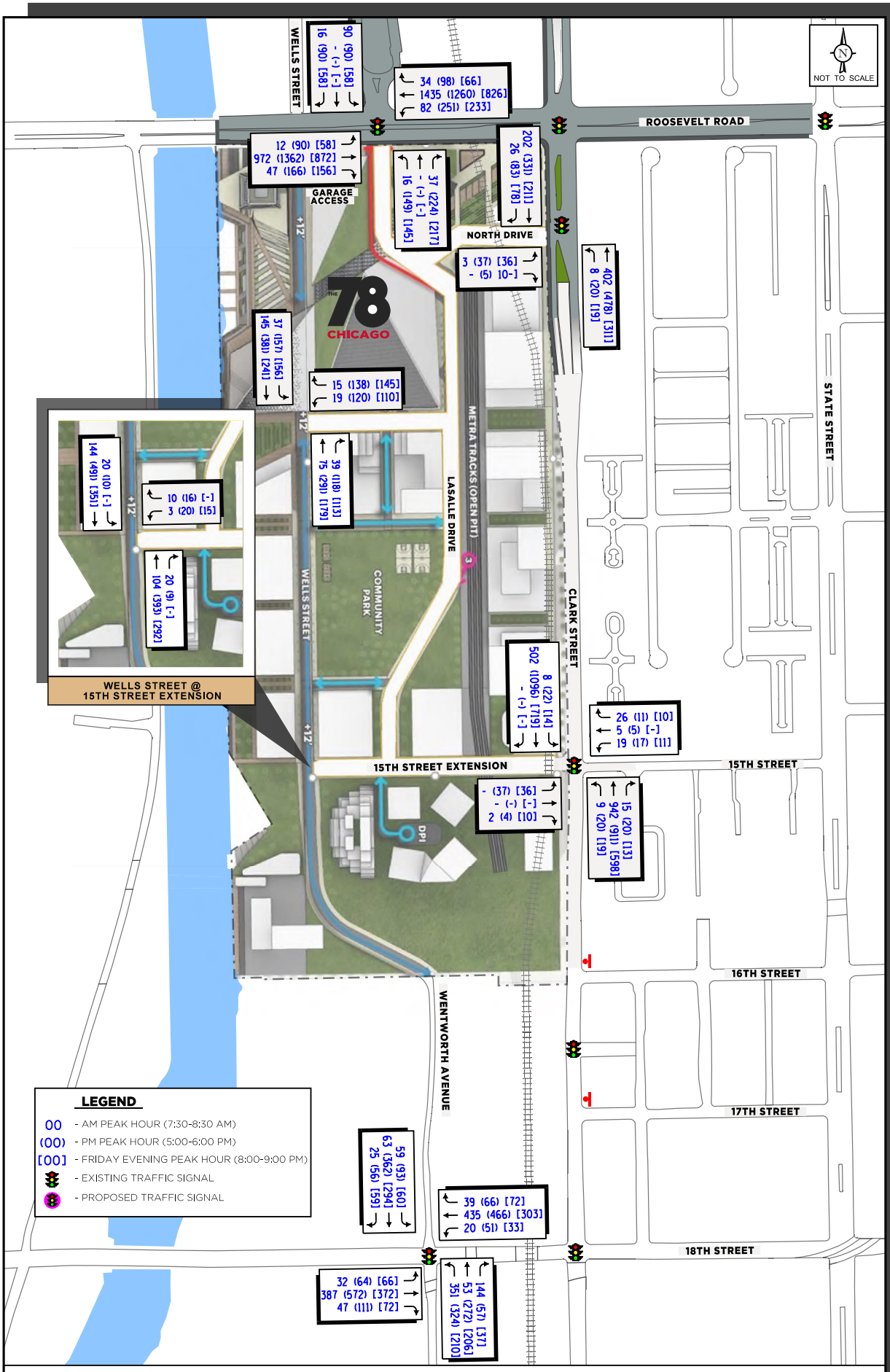
Job No: 21-203 Figure: 1B



PHASE I TOTAL PROJECTED TRAFFIC VOLUMES
OVERALL AREA

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

Job No: 21-203 Figure: 2A



PHASE I TOTAL PROJECTED TRAFFIC VOLUMES
SITE AREA

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-203 Figure: 2B

Level of Service Table

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0

Unsignalized Intersections	
Level of Service	Average Total Delay (SEC/VEH)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Source: *Highway Capacity Manual*, 2010.

Capacity Analyses Reports